

W. H. Burns

Boiler Furnace & Flue

N^o 99839.

Patented Feb 15. 1870

Fig: 1.

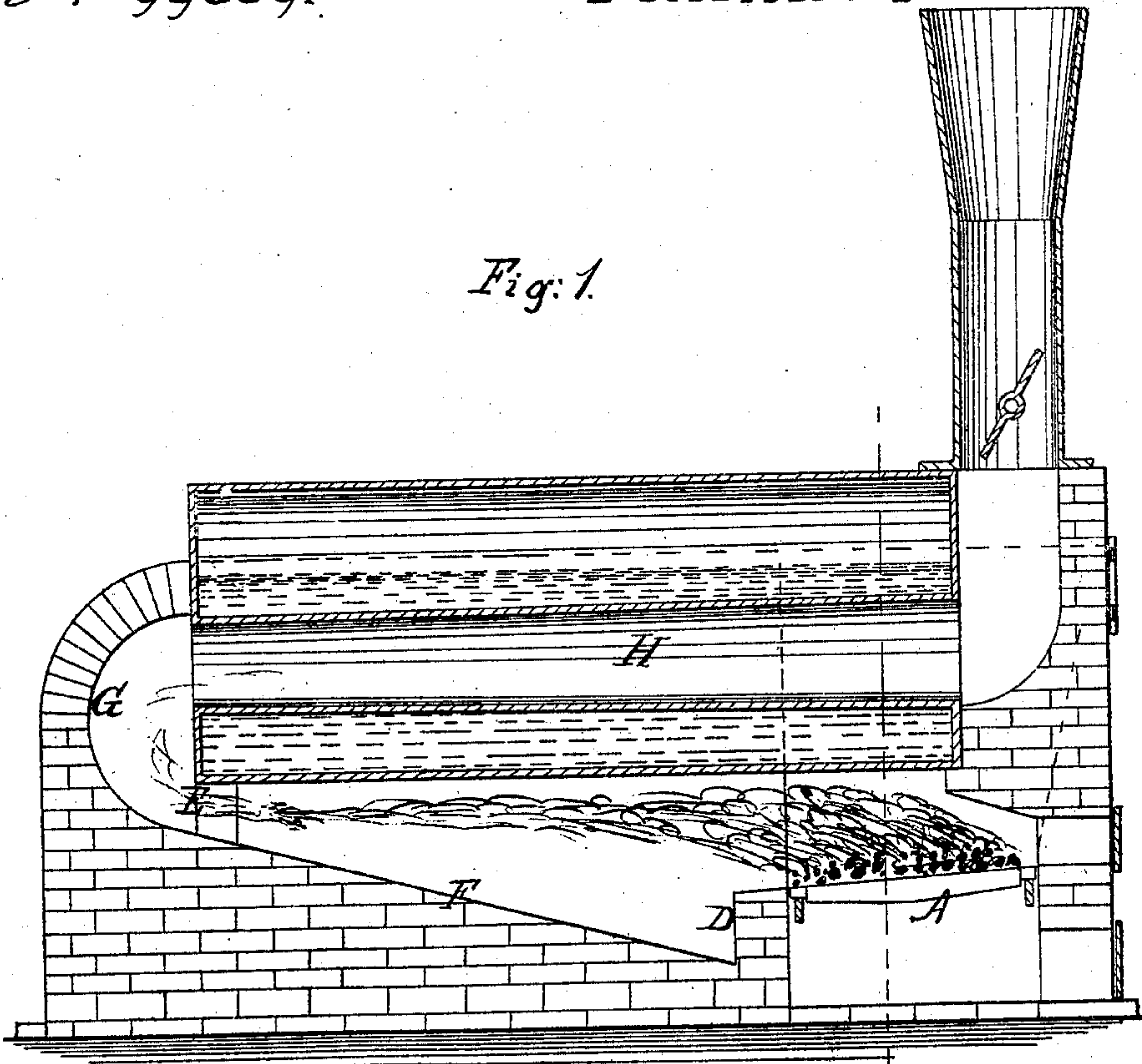
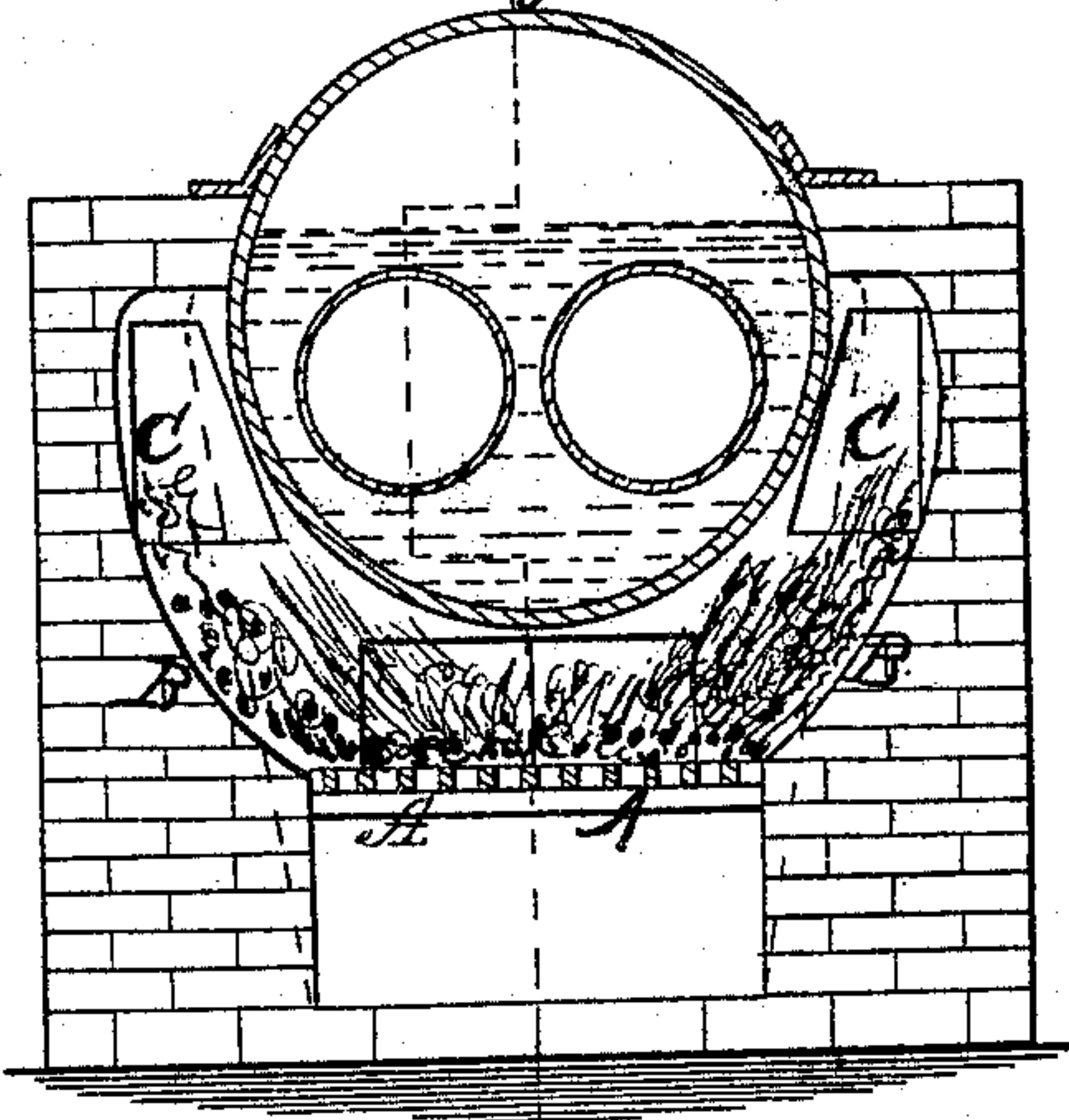


Fig: 2.



Witnesses

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W. H. BURNS, OF UNIONVILLE, MISSOURI.

Letters Patent No. 99,839, dated February 15, 1870.

IMPROVEMENT IN BOILER FURNACES AND FLUES.

The Schedule referred to in these Letters Patent and making part of the same.

To all whom it may concern:

Be it known that I, W. H. BURNS, of Unionville, in the county of Putnam, and State of Missouri, have invented a new and useful Improvement in Boiler Furnaces and Flues; and I do hereby declare that the following is a full, clear, and exact description thereof, which will enable others skilled in the art to make and use the same, reference being had to the accompanying drawing forming part of this specification.

The object of this invention is to provide certain improvements in setting and adjusting boilers for generating steam for power in the furnaces and arranging the flues to promote the draft to the best advantage, also to adapt the furnace for burning sawdust and other similar waste matter.

Figure 1 represents a longitudinal section of a boiler furnace and flues arranged according to my improvements.

Figure 2 represents a transverse section of the same.

Similar letters of reference indicate corresponding parts.

From the fire-grate A I propose to curve the side walls B outward and upward to about the height of the center of the boiler. This gives increased space around the sides of the boiler, which facilitates the upward flow of the heat, also the more perfect combustion of the gases. It also provides room for supplying the wet sawdust through doors C to the inclined sides of the walls without checking the main part of the fire, where it may lie and gradually become dried and fit to burn, thus keeping a regular and even fire mostly or wholly of such fuel, it being gradually worked down into the fire by the attendant previous to adding fresh supplies.

Behind the fire grate is a ledge at D, behind which

the bottom of the furnace drops down to a considerable extent, then gradually rises to the rear. This also provides space where a bank of wet or green sawdust may be placed to be gradually consumed, extending the flame to the rear.

At the rear end of the boiler I provide a bridge wall, E, forming a throat, and behind this throat I form the furnace wall, on a gradual curve, G, which facilitates the draft to better advantage than when the wall is angular or has projections.

The flues H and smoke-stack I propose to make larger at their delivering ends, which I also find to be greatly advantageous for the draft, as it affords the rarefied air room for expansion in the direction it is moving, thus greatly accelerating it.

In regard to the various matters, forms, and peculiarities of construction above described, they are all old severally except the graduated increase in the diameter of the flues and smoke-stack, and they are old in combination, except as hereinafter specified.

Having thus described my invention,

What I claim as new, and desire to secure by Letters Patent, is—

1. A boiler furnace combining the curved side walls B, ledge D, incline F, throat E, curve G, and inlet doors C C, with flues H, all as and for the purpose specified.

2. The flues H and smoke-stack, formed of a gradually increasing diameter outwardly, to allow the heated air to expand as it progresses.

W. H. BURNS.

Witnesses:

JOHN E. SWALLEY,

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